REMARKS

The Examiner has maintained his rejection of the remaining claims 1, 3-5, 7 and 8 in this application under 35 U.S.C. 102(e) as being anticipated by U.S. patent no. 6,531,784 to Shim et al. (Shim).

The following are limitations in the independent process claim 5, as now amended, and with corresponding limitations in the independent apparatus claim 1, as now amended. The following limitations (with wording differences in the apparatus claims) are in all the claims:

> *attaching the flattened electrically conductive balls to the die contacts,*
>
> ...
>
> ***horizontally attaching*** *the other ends of the wires to the flattened electrical conductive balls, thereby making electrical connections therebetween, and wherein the other ends remain substantially parallel to the surface of the die.*

This change makes clearer that the flattened balls are separate entities placed on the die independently from the wires, and that the wires are later connected horizontally (parallel to the die surface) to the flattened balls, see FIG. 7. This aspect of the present invention has an advantage, stated at the top of page 4 or the original application, of reducing the height of the wire bond loop compared to prior art and thus the finished package. It is respectfully suggested that Shim does not show, suggest or realize the advantage of this structural configuration and process steps. Note that in Shim's FIG. 9 (used by the Examiner) the wires 28 emerge vertically from the balls 58. See Shim's col. 6, lines 26-41 where it is stated that:

"...Those skilled in the packaging art will recognize that, in conjunction with the bonding of conductive wires 38, 38A, 38B, the **vertical height of wires bonded with so-called 'ball bonds' 58,** such as those shown on the tops of dies 14 and 16 in FIG. 9, **is greater** than that of wires bonded with so-called 'stitch,' 'crescent,' or 'wedge' bonds 60, such as those shown on top of the dies in FIGS. 1-8. This is because a **ball-bonded wire 38 departs from the underlying bonding surface perpendicularly,** then transitions laterally through a relatively sharp bend 59, as shown in FIG. 9, whereas wires 38A, 38B bonded with the latter, stitch-type of bonds 60, which are made with the wire 38A, 38B nearly parallel to the bonding surfaces..."

Note that the wires in Shim that attach with the "stitch-type of bonds 60" **do not attach to ball bonds.** Shim does not show or suggest a "ball bond" that is "flattened" with a wire that is separately attached to and depart horizontally from the ball parallel to the die surface, as in the present claims as now amended. Shim describes only the known vertically departing ball bonding structure.

A fair reading of Shim, as in the cited paragraph, is that the known ball bond structure has the wire departing vertically from the underlying bonding surface. Shim must take care stacking the dies (as he admits, see col. 6, lines 43 et seq.), but he **does not realize or contemplate** that a separate flattened ball with a later horizontally connected wire might benefit his invention. Maybe it would not, but, regardless, Shim does not show or suggest such a structure or such a process as in the present claims as amended.

Respectfully, Shim does not anticipate the limitations of the claims as now amended and it is respectfully requested that a Notice of Allowance be issued for this application.

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If there are any questions, please contact Applicant's attorney at the number listed below.

Respectfully submitted,

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